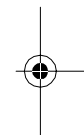
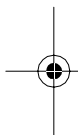




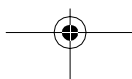
Cat. No. 12-2012  
**OWNER'S MANUAL**

Please read before using this equipment.

# Electronic Subwoofer Crossover



**OPTIMUS®**



## FEATURES

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Your Optimus Electronic Subwoofer Crossover is designed to give you excellent control over the sound produced by your autosound system. The crossover directs a selectable range of lower audio frequencies to your subwoofer speakers for increased bass response, and blocks mid-range frequencies to enhance sound clarity.

The crossover's features include:

**Two Types of Inputs** — lets you use the crossover with an autosound system that has either line-out jacks or standard speaker outputs.

**Low Pass Filter Selector** — lets you adjust the frequency filter to 50 Hz, 90 Hz, or 180 Hz to match your subwoofer speaker system.

**Input Level Controls** — let you adjust line or speaker input levels to match your autosound system.

**Bass Boost Controls** — let you boost the selected subwoofer bass output by 12 dB.

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## INSTALLATION

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You can easily connect this crossover. However, improper connections can damage your crossover and other components in your autosound system, and possibly your vehicle's electrical system. Before you begin, you should know:

- Which wire is the power wire in your vehicle's electrical system
- If your autosound system has line-level or speaker-level outputs

Before you install your crossover, carefully read all the installation instructions in this owner's manual.

### Notes:

- Use audio patch cables with phono-type connectors (available at your local RadioShack store) to complete the low level input/output connections.
- Use your autosound system's speaker wires to complete the high level input connections.
- Use 18-gauge wire (available at your local RadioShack store) to complete the power connections.
- Turn your autosound system's volume all the way down before installation.

- Set the subwoofer amplifier gain (input level) and crossover input level controls to their midpoints.

## CHOOSING A MOUNTING LOCATION

Choose the mounting location for the crossover first, but do not mount it until you have connected the wiring, adjusted the controls, and confirmed that the crossover operates properly with your system. By choosing the location first, you can later mount the crossover without re-routing the wires.

Choose a mounting location that:

- Is as near as possible to your autosound system connections (It is important to keep the audio cables as short as possible to reduce noise and interference)
- Does not interfere with the operation of the vehicle
- Is not directly in front of a heating vent
- Allows drilling of mounting holes without damaging other vehicle components
- Allows convenient and safe routing of wires

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## CONNECTING INPUT/ OUTPUT

reduces the possibility of damage to your crossover or autosound system during installation.

**Note:** After you complete the connections and reconnect the battery cable, you will need to reset all clock/memory devices in your vehicle.

2. Connect your autosound system's L (left) and R (right) outputs to the crossover's L (left) and R (right) **INPUT** jacks.

This crossover has both speaker-level and line-level inputs. If your autosound system has line-level outputs, use the two **LOW LEVEL** input jacks. If your autosound system does not have line-level outputs, tap into the wires for the existing speakers and use the four **HIGH LEVEL** input jacks. Connect the autosound system speaker wires to the crossover, carefully matching polarity (L+ to L+, L- to L-, R+ to R+, and R- to R-).

Use either the **LOW LEVEL** or **HIGH LEVEL** input terminals, but not both.

3. Connect the crossover's L (left) and R (right) **OUTPUT** jacks to the L (left) and R (right) inputs of the amplifier that drives the subwoofer speakers.

**Note:** Be sure to correctly match the input and output connections (left output to left input, and right output to right input).

1. Disconnect the negative (-) cable from your vehicle's battery. This
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## CONNECTING POWER

1. Ensure the negative (–) cable is disconnected from your vehicle's battery.

2. Connect the crossover's **GND** (ground) terminal to a metal part of the vehicle's frame.

**Caution:** Do not connect the ground wire to a non-metallic (plastic) part, or to any part insulated from the vehicle's frame by a non-metallic part.

3. Connect the crossover's **B+12V** (power) terminal directly to the vehicle battery's +12 volt terminal.

4. Connect your autosound system's switched power lead wire (usually orange) to the crossover's **REMOTE** terminal. This turns the crossover on and off when you turn your autosound system on and off.

**Note:** If your autosound system does not have a switched power lead wire, connect the crossover's **REMOTE** terminal to a point in your vehicle's fuse box that provides 12-volt battery power only when the ignition is set to ON or ACC.

5. Reconnect the cable to your vehicle battery's negative (–) terminal.

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## TESTING THE CONNECTIONS

Follow these steps to check your autosound system before adjusting and mounting the crossover.

1. Turn on your autosound system and adjust the volume to a comfortable level. The **POWER** indicator lights.
2. Play a cassette tape or CD that has a wide dynamic range, or tune to a strong FM station.
3. If the sound from any speaker is distorted or has static (or if there is no sound from a speaker), turn off the power immediately, then check the wiring connections.

If the system sounds with no distortion or static, proceed to "Adjusting the Controls."

## ADJUSTING THE CONTROLS

### Setting the Low Pass Crossover Point

The **LOW PASS** selector lets you set one of three crossover points. All signals at or below the selected frequency "cross over" to your subwoofer speakers.

Set the selector to **180 Hz** to increase the range of low-frequency sounds. Set the selector to **90 Hz** or **50 Hz** to decrease the range of low-frequency sounds.

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## Adjusting the Input Level

The input level controls let you adjust the crossover to balance the subwoofer's sound level with the rest of your autosound system.

Turn your autosound system up to a normal listening level, then use a flat-head screwdriver to adjust each **INPUT LEVEL** control until the subwoofer is as loud as desired.

**Caution:** If you use the **HIGH LEVEL** input terminals and turn your autosound system volume too high for the crossover, you could damage the crossover. To reduce this possibility, set the **INPUT LEVEL** controls past their midpoints.

## Adjusting the Subwoofer Bass Boost

The **SUBWOOFER BASS BOOST** controls let you boost 45, 80, or 120 Hz subwoofer output by 12 dB to enhance low sounds when desired. Set the **45Hz/80Hz/120Hz** selector to the appropriate position, then set **+12dB** to **ON**. To return to the normal bass setting, set **+12dB** to **OFF**.

## MOUNTING THE CROSSOVER

After you have correctly connected the crossover and set the controls, follow these steps to mount the crossover.

1. Using the crossover mounting holes as a guide, mark the positions for the mounting screw holes at the desired location.
2. At each marked position, drill a  $\frac{9}{64}$ -inch (3.57 mm) hole.

**Caution:** Be careful not to drill into anything behind the mounting surface.

3. Attach the crossover at the mounting location using the supplied sheet metal screws, lock-washers, and washers.

## SPECIFICATIONS

Power Supply .....	14.4 Volts DC Negative Ground
Current Drain .....	30 mA
Total Harmonic Distortion (THD) .....	0.04% at 20 Hz
Hum and Noise .....	150 $\mu$ V typical
Line-Level (Low) Input Impedance .....	10 kOhms
Speaker-Level (High) Input Impedance .....	100 Ohms
Operating Voltage .....	10.5–16V DC
S/N Ratio .....	90 dB (A-Weighted)
Crossover Frequency .....	Subwoofer, Low Pass: 50 HZ/90 Hz/180 Hz
Crossover Slope .....	12 dB/Octave
Channel Separation .....	60 dB Typical
Output Level .....	More Than 2V RMS at 1% THD
Dimensions (HWD) .....	1 $\times$ 3 <sup>9</sup> / <sub>16</sub> $\times$ 5 <sup>1</sup> / <sub>8</sub> Inches (26 $\times$ 92 $\times$ 131 mm)
Weight .....	10.2 oz (290 g)

Specifications are typical; individual units might vary. Specifications are subject to change and improvement without notice.

### RadioShack Limited Warranty

This product is warranted against defects for 1 year from date of purchase from RadioShack company-owned stores and authorized RadioShack franchisees and dealers. Within this period, we will repair it without charge for parts and labor. Simply **bring your RadioShack sales slip** as proof of purchase date to any RadioShack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse, accidental damage, alteration or improper installation.

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